Art. XIV.—*Descriptions of New, or Little Known, Polyzoa.*

Part VIII.

By P. H. MacGillivray, M.R.C.S., F.L.S.

[Read 20th November, 1884.]

Family Catenicellidæ.

Catenicella gracilenta, n. sp. Plate I., fig. 3.

Cells much elongated, very narrow; mouth arched above, slightly hollowed below, or subcircular. Anterior surface papillose; posterior, smooth. A narrow, entirely lateral vitta extending the whole length of the cell. Lateral processes small, usually with a sharp angle above projecting outwards and forwards; a minute avicularium opening outwards on the outer edge. Ovicell cemented to the front of the cell above, which is sessile on the ovicelligerous cell, with a quadrate smooth area.

Port Phillip Heads, dredged by Mr. J. B. Wilson and myself.

This is a small species, readily distinguished by its exceedingly slender cells. The ovicell is peculiar. As in *C. elegans, Buskii, fusca,* and some others, it is cemented to the front of the cell above, which is sessile on the ovicelligerous cell. On the front of the ovicell is a quadrate, smooth area, about twice as high as broad, totally different from the marking of any other species. I had, unfortunately, not seen the ovicell before the plate was lithographed, so that it is not figured. The specific name was suggested by Mr. Wilson.

We have several other forms of *Catenicella,* which I believe to be different from those described. The discrimination of the minute species is not always easy, and the whole genus requires a careful revision, which I hope to be soon able to make.

Family CELLULARIIDÆ.

Canda tenuis, n. sp. Plate IV., fig. 1.

Zoarium very slender; cells biserial, elongated; a spine on each side above; margins thick and crenulated; aperture elliptical, occupying about two-thirds of the front; avicularia on the median tract large, with the mandible opening upwards; vibracula with groove extending beyond the cell and encroaching on that of the opposite series; setæ slender, smooth; radical connecting tubes slender.

Port Phillip Heads.

This is closely allied to the common *C. arachnoides*, from which it is distinguished by its much smaller size, more slender branches, and especially by the vibracular grooves for the lodgment of the setæ extending on the surface of the cell on the other series; while in *C. arachnoides* they are confined to the cells to which they belong, not reaching quite to their inner edges.

Maplestonia simplex, n. sp. Plate I., fig. 2.

Zoarium formed of slender, dichotomously-divided branches, each division rising from the outer angle of a cell, and each internode being unicellular. Cells elongated, expanded above, narrowed below; margin thickened and inflected; the anterior surface filled in by a thin membrane, with the mouth opening by a flap at the upper extremity. Posterior surface smooth.

Port Phillip Heads, Mr. J. B. Wilson.

Forms small tufts, about three-quarters of an inch in height, of slender dichotomously-divided branches. The cells are elongated, wide and square above, tapering below, and each gives rise to another at each upper angle, so that the internodes are unicellular. The joints are annulated.

Family SALICORNARIIDÆ.

Tubucellaria cereoides, Ellis and Sol. Plate I., fig. 4.

Zoarium consisting of cylindrical branches, each branch articulated by a corneous tube to the side of that from which it springs. Cells indistinct; mouth circular; peristome slightly projecting; whole surface punctate.

Port Phillip Heads, Mr. J. B. Wilson.

Of this I have only seen two specimens, sent to me by Mr. J. B. Wilson; one three-quarters of an inch in length, the other smaller. The zoarium consists of cylinders branched exactly as in *Cellaria australis*, the branches not dviding dichotomously, but rising from the sides by flexible corneous tubes. The cells are, on the surface, quite confluent, and mostly only distinguishable by their mouths. The whole surface is beautifully punctate, the punctations being caused by the reticulation of chains of small depressions or pores. The cells are slightly bulging below, and there is usually a minute circular opening above the middle, not shown in the figure.

In a Mediterranean specimen, the cylinders present the same appearance, but are more calcified, and some are larger. The chains of reticulation are raised by calcareous deposition, so as to leave pits corresponding to the punctations in the Victorian specimen figured. The cells are more bulging, mostly separated by distinct lines, and the peristome is more prominent. The corneous tubes connecting the smaller tubes are annulated. The connection of some of the larger cylinders is composed of bundles of tubes similar to the radical tubes, by a mass of which the whole zoarium has been attached. The latter, however, are very loose, branched and jointed.

Family Bicellariidæ.

Beania Wilsoni, n. sp. Plate II., fig. 1.

Cells connected with six others by long, corneous tubes, suberect, entirely open in front; two or three short, straight, slender spines, and one or two sharp, incurved spines on the margin on each side. Posterior surface smooth. A large, capitate avicularium articulated at the upper part of the cell on each side.

Port Phillip Heads, Mr. J. B. Wilson.

This is undoubtedly distinct from the other Australian forms described, although in some respects approaching *B.* (*Diachoris*) *spinigera*. It is, however, closely allied to the South African *Diachoris distans* of Hincks, from which it differs in having avicularia on both sides, and in the absence of the round mark of the radical tube posteriorly.

Another species of *Beania*, which has been dredged at the Heads by Mr. Wilson and myself, seems to be identical with Busk's *D. costata*, described from Kerguelen's Land (*Phil.*

Trans. 1879, extra vol.), from which it differs only slightly in the size and direction of the avicularia, which in the Kerguelen form are described as large and reclinate, and seem to be very similar to those of *B. spinigera*, while in the Victorian specimens they are smaller, and pointed more forwards.

I have already given my reasons for uniting most of the species of *Diachoris* with *Beania*, and referring the others elsewhere.

Family Gemellariidæ.

Urceolipora dentata, n. sp. Plate I., fig. 1.

Cells arranged in a double series facing opposite ways, alternate, elongated, subcylindrical, but narrowed below and projecting in front. Mouth terminal, oblique, lower margin straight, upper semicircular with usually five short, stiff spines. Ovicell large, imbedded in the front of the cell above.

Port Phillip Heads, dredged by Mr. Wilson and myself. Forms small tufts about an inch high. The cells bear a marked resemblance to those of *Calvellia bicornis*, although there is not the same peculiar mode of connection. On the lower lip there is on each side a minute mark or pit, and immediately below a small median pore.

Family Flustridæ.

Cabasea reticulum, Hincks. Plate IV., fig. 2.

I have received some small fragments from Mr. Wilson which seem referable to the *Flustra reticulum* of Hincks (*Ann. and Mag. Nat. Hist., Aug., 1882*). The zoarium is divided into broad, short, ligulate branches. The cells, which are disposed in a single layer, are of large size, rounded above, wider at the middle, and contracted below. The margins are very prominent, and the mouth is small, situated at the upper part.

In one of the specimens a cell is surmounted by an ovicell, which is rounded, extending about half way up the cell above. In the same specimen there is a single avicularium which agrees with Hincks' description, and is very peculiar. It replaces a cell and is of the same size. The mandible is very large, rounded above, and convex, fitting closely to the thin margin. The lower part of the avicularian cell, below

the articulation of the mandible, is very small, membranous, and triangular. The specimens present an extraordinary development of spines. These are situated along the posterior edges of the zoarium, are directed upwards, backwards, and inwards, and are divided into numerous long, nearly straight, sharp branches. They are not noticed by Hincks, and as the specimens agree with his figure and description in other respects, I think they can only be varietal, and cannot consider them as of specific value.

Family MEMBRANIPORIDÆ.

Membranipora bimamillata, n. sp. Plate II., fig. 2.

Zoarium encrusting. Cells elongated, quadrate, separated by raised margins. Aperture elliptical, the edge formed by a thickened, crenulated rim; the lower part of the aperture occupied by a large plate or denticle, sloping backwards and usually with a fissure or notch on one side. Front of the cell formed by a calcareous, granulated lamina, sloping inwards to the aperture. At the lower part of the cell are two rounded prominences or mamillæ, or occasionally only a single, transversely elongated mass.

Portland, Mr. Maplestone.

The broad, smooth plate at the lower part of the aperture is evidently of the same nature as the serrated denticle of *Biflustra delicatula*, with which, and *M. papulifera*, this species is closely related.

Membranipora porcellana, n. sp. Plate II., fig. 3.

Cells small, quadrate, separated by distinct, narrow, raised margins; upper part membranous; lower part occupied by a large, smooth, white elevation; a short, thick, rounded process on each side at the upper angle.

Portland, Mr. Maplestone.

The cells in this species are very peculiar. They are quadrate, separated by narrow, raised margins. The upper half is membranous, the membranous front being situated at a considerable depth, with the flap-shaped mouth at the upper end. The lower half is prominent, smooth, white, calcareous, rising higher than the separating margin. The upper part of the cell is in the form of a broad, shallow arch hollowed out in the base of the prominent portion of the cell above.

Family MICROPORELLIDÆ.

Microporella scandens, n. sp. Plate IV., fig. 7.

Alysidota ciliata, M'G.

In 1869 I described a form which I referred to Busk's genus *Alysidota* as *A. ciliata*. I am, however, satisfied that *Alysidota* is founded on insufficient characters, and that this species is rightly referred to *Microporella*, one of the commonest species of which is the well-known *M. ciliata*, so that it is necessary to give it a new specific name. I have only seen one specimen, which consists of a chain of eight cells, four surmounted by ovicells, running up a branch of *Bicellaria grandis*. The cells are pyriform. The mouth is arched above and straight below. There are four or six long, articulated oral spines. The surface is smooth, and presents no marks except the suboral pore, which is small and semilunar. The ovicell is of large size, rounded, and the upper edge, where attached to the cell above, is slightly dentate in the same manner, but not so distinctly as occurs in *M. Malusii*.

Microporella diadema, M'G. Plate IV., figs. 3—6.

This beautiful species varies considerably in the appearance of the surface of the cell and ovicell, according to the amount of calcareous deposit, in the size of the spines, the form and size of the suboral pore, and the situation and direction of the avicularia. In fact, it is even more variable than its well-known congener, *M. ciliata*.

In the typical form the surface is only slightly calcareous, smooth or with a few impressions round the margin. The suboral pore is not more than a third part of the width of the mouth, and is rounded or semicircular. The avicularia are situated on one or both sides on a level with, or rather above, the pore, and are directed outwards and slightly downwards. The front of the ovicell is smooth, surrounded by a prominent broad band of radiating beaded ridges.

The following varieties, which I have figured, seem worthy of distinction:—

Var. *lunipuncta*.—In this variety the cells are broad, smooth, and slightly grooved at the edges. The suboral pore is a narrow, lunate slit, equalling the mouth in width. The avicularia are of large size, situated below the pore, and

with the mandibles pointed outwards and upwards. The ovicell presents the usual arrangement, but is flatter.

Var. *longispina*.—Cells broad, smooth, flat, and slightly calcareous, grooved at the edges. The spines round the mouth are very large and long, articulated and jointed; the lower, on one or both sides, of enormous length, and divided by two or three corneous joints. Suboral pore round, oval, or semicircular; about the same width as in the normal form. Avicularia large, opposite the pore, and pointing downwards and outwards.

Var. *lata*.—Cells broad, flat, smooth, except some faint grooving at the edges. Pore of moderate size, semilunar. Usually an avicularium on one side only, although occasionally on both; generally situated above the level of the pore, sometimes by the side of the mouth, the long slender mandible directed mostly downwards, with a slight inclination outwards, but at other times directed more outwards.

Var. *canaliculata*.—I have had some doubt about this form, but am satisfied, after an examination of specimens in various stages, that it is merely a variety of *M. diadema*, the differences being caused by a large deposition of calcareous matter. The edges of the cells are deeply grooved, the intervening walls, as well as the cell margin, very calcareous. A mass of calcareous matter is heaped up in a sort of semilunar ridge in the middle of the cell. The suboral pore is of moderate size, round. There is a large avicularium on one side, on the level of the pore, the mandible directed straight outwards. In the ovicell the beaded band has become smooth, and from its inner edge a series of deep grooves, with calcareous intervening ridges, radiate inwards to the centre, which is elevated into a calcareous mound.

Family Myriozoidæ.

Schizoporella cryptostoma, n. sp. Plate II., fig. 4.

Cells indistinct. Mouth arched above, straight below, with a large sinus. 4—6 articulated spines on the margin, the lower, on one or both sides, frequently larger. A large, conical process arising from the centre of the lower margin of the peristome, and almost entirely concealing the oral sinus. Surface of cells tubercular and glistening. Ovicell large, rounded, prominent, shining, surface smooth, or with faint, converging lines. Avicularia of two kinds, either

small, broad, and situated on a calcareous eminence, usually by the side of the mouth, or of great size, with a long, narrow, acute mandible, nearly equalling the cell in length.

Port Phillip Heads, Mr. J. B. Wilson.

At first sight this species has a striking resemblance to a *Rhyncopora*, especially *R. longirostris* of Hincks, the large avicularia of which are very similar. The formation of the oral process, however, is quite distinct. It is not an outgrowth from the side of the mouth, but is a process of the peristome springing from the lower margin below the sinus.

Family CELLEPORIDÆ.

Lekythopora hystrix, M'G. Plate II., fig. 6.

Of this species I have given an illustration to show the form of the mouth, which, in my previous figures, was obscured by the growth of the peristome. It is lofty, and with a sinus in the lower lip.

Cellepora munita, n. sp. Plate II., fig 5.

Zoarium erect, branched; branches cylindrical, annulated by slight depressions surrounding the branches. Cells confused, indistinct. Mouth wide, with a deep rounded sinus below. An avicularium on one or both sides. Numerous scattered avicularia of varying size, some very large. Ovicell with a distinct area, with numerous small depressions.

Port Phillip Heads, dredged by Mr. Wilson and myself. Readily recognised from our other Victorian species by the distinctly annular appearance of the thick, blunt branches.

Cellepora longirostris, n. sp. Plate III., fig. 1.

Zoarium erect, branched, cylindrical. Cells very indistinct, decumbent. Mouth with a distinct, rounded sinus. A small avicularium is found on one side of the sinus, becoming carried forward by the development of the peristome, the opposite corners of which arch over in front of the sinus, meeting to form a rounded opening, which afterwards is filled in. Numerous scattered avicularia, with very long, narrow mandibles, pointed downwards.

Port Phillip Heads, Mr. J. B. Wilson and myself.

Cellepora platalea, M'G. Plate III., fig. 2.

This species has been already described (*Trans. Roy. Soc., Vict.*, 1869), but not figured.

Zoarium very small, glassy, encrusting. Cells very small, rounded, irregularly heaped. Mouth slightly hollowed below, but without a distinct sinus; frequently a broad, suboral mucro. Avicularia with very long, slender, spatulate mandibles. Ovicells globular, with a distinct arched area, with radiating grooves.

A very minute and probably common species, distinguished by the markings on the area of the ovicell, and the long, very narrow spatulate avicularia. The figure is not quite correctly lithographed, the lower lip of the mouth showing a sinus instead of a slight hollow.

Cellepora Costazii, Aud. Plate III., fig. 3.

Zoarium encrusting. Cells ovate, smooth, irregularly arranged, confused. Mouth wide, with a broad, rounded sinus in the lower lip. Usually a prominent mucro below the mouth supporting a small avicularium, and occasionally an aviculiferous process from the peristome on one or both sides. Numerous scattered avicularia, some very large, with broadly expanded spatulate mandibles. Ovicells of moderate size, with a rounded or mitriform area, bounded by a distinct raised margin, pitted or sculptured in a radiate manner.

Port Phillip Heads, probably common.

There can be no doubt of the identity of this with the European species (described also as *C. Hassallii*). The only difference I can see in Australian specimens is that the spatulate avicularia attain a considerably larger size.

Cellepora serratirostris, n. sp. Plate III., fig. 4.

Zoarium encrusting. Cells much confused, granulated; the outer, towards the growing edge, decumbent, elongated, the older more erect, stouter, and thicker. Primary mouth with a deep sinus, which becomes bridged across or closed by the junction of the opposite angles. A suboral process, usually bending to one side, with a large avicularium at the summit. Avicularia very numerous, and of various forms, thickly scattered over the zoarium; some very large, with long, spatulate, blunt or pointed mandibles, raised on

considerable boat-like elevations; some spatulate and smaller; some on rounded cells, with broad mandibles, the upper edge of the rostrum serrated.

Port Phillip Heads.

The most marked peculiarity of this species is the great abundance and extraordinary forms of the avicularia. The marginal cells are elongated and decumbent; the very youngest have the mouth straight and entire below, but in almost all a process of the peristome is seen rising on each side and meeting in the centre, leaving a round opening (Fig. 4*c*), which in time becomes filled in. Below the mouth a process rises on one side, extending upwards and curving over to the opposite side, with a considerable avicularium on its summit, the top of the process, where the mandible shuts down, being serrated. In some marginal cells this process is very large and directed upwards (4*a*), the avicularium situated obliquely on the summit. In some (4*c*) it is much smaller. The older cells vary much in shape, being usually short and oblique, or nearly erect. The oral pore of the peristome can frequently still be seen, and the peristome is also in some cases produced above in a hooded manner somewhat like a commencing ovicell. In one or two the peristome is almost tubular, with a slit in the lower edge. The aviculiferous process below the mouth is usually of small size. Besides, the avicularium on this process, there is a multitude of others scattered over the zoarium. Some are small and spatulate, others of the same shape but of enormous size and much raised, the point of the calcareous eminence projecting over part of the neighbouring cells. Others are broad and thick, almost globular, either separate or taking the place of the suboral process, with broad mandibles, the upper receiving edge of the cell or rostrum being serrated. Besides these, there are a few of great size, projecting above the surface of the zoarium, with very large broad mandibles and the upper edge serrated (Fig. 4*d*). The whole surface of the cells and avicularian cells is finely granular.

Cellepora megasoma, M'G. Plate III., fig. 5.

Zoarium encrusting. Cells ovoid, irregularly arranged, frequently bulging below, and with an imperfect umbo. Mouth arched above, about as high as wide, with a rather sharp sinus in the lower lip. Scattered avicularia, frequently

a small one, with a semicircular mandible below or to one side of the mouth. Ovicell not prominent, granular, or pitted.

Port Phillip Heads.

Forms a large, encrusting zoarium, one specimen measuring 2 inches by 1½ inches. The marginal cells, as usual in the *Celleporæ*, are decumbent, and I believe it was a cluster of these that I described previously as *Lepralia megasoma*. The others are elevated in various degrees. There is no distinct mucro. The surface of the cells is normally smooth, but in portion of one specimen, in which most are so, a number have a series of longitudinal, elevated ribs extending the whole length. The markings on the ovicells are convex, but become worn off, and then appear as pits. It forms a transition between the genera *Schizoporella* and *Cellepora*.

Cellepora rota, n. sp. Plate III., fig. 6.

Zoarium encrusting. Cells irregularly arranged, nearly erect, more or less globose. Mouth with a deep sinus in the lower lip; an elevated process, surmounted by a short, broad avicularium on each side, the mandible broadly triangular, with an obtuse point; surface smooth or pitted. Ovicells much raised, with a nearly circular, defined area, marked by radiating grooves.

Port Phillip Heads.

The cells are very distinct, the old ones nearly globular, and looking directly upwards. The peristome forms a narrow rim with a prominence on each side, on the summit of which is a short, broad avicularium, with the mandible pointed upwards and outwards. My specimens have no avicularia except those at the sides of the mouth.

Family TUBULIPORIDÆ.

Tubulipora lucida, n. sp. Plate V., fig. 1.

Zoarium small, flabelliform.. Cells mostly distinct, arranged in irregular rows, smooth and glistening; peristome long, tubular, white, with a nearly circular mouth. Ovicells large inflations, pierced by numerous cells, thickly covered with white-bordered pores.

Port Phillip Heads; Portland, Mr. Maplestone.

I have seen several specimens of this species, the most perfect being that figured, which was found at Portland by

Mr. Maplestone. It is distinguished by the polished, glistening surface of the cells, usually destitute of any marks, but occasionally showing a few small puncta. Sometimes a few cells in a series are united side to side, and in that case the orifices of the peristome are somewhat prismatic.

Diastopora bicolor, n. sp. Plate V., fig. 2.

Zoarium nearly circular, consisting of three parts: a central elevated portion composed of perfect cells, surrounded by a broad fringe of imperfectly developed cells, beyond which is a thin lamina; the central portion is red, the remainder glassy. The central portion is much raised, flat and depressed at the centre. The cells are arranged in irregular, radiating series; the series are distinct, but without intervening spaces. The cells are slightly rugose and thickly punctate. The mouth is oval or elliptical, with slightly thickened margin; those of the marginal cells are open, most of the inner being filled in by a plate punctate or perforated like the rest of the cell. In the central part are numerous rounded eminences, mostly at the commencement of the series of cells, and of the same width; they are punctate or perforated in the same manner, but present no trace of mouth. The surrounding fringe consists of a broad layer of imperfectly developed cells; the thin lamina beyond this is marked with slight, radiating grooves, as occurs in the corresponding part of other species of *Diastopora* and *Discoporella*.

Port Phillip Heads, Mr. J. B. Wilson.

EXPLANATION OF FIGURES.

Plate I.

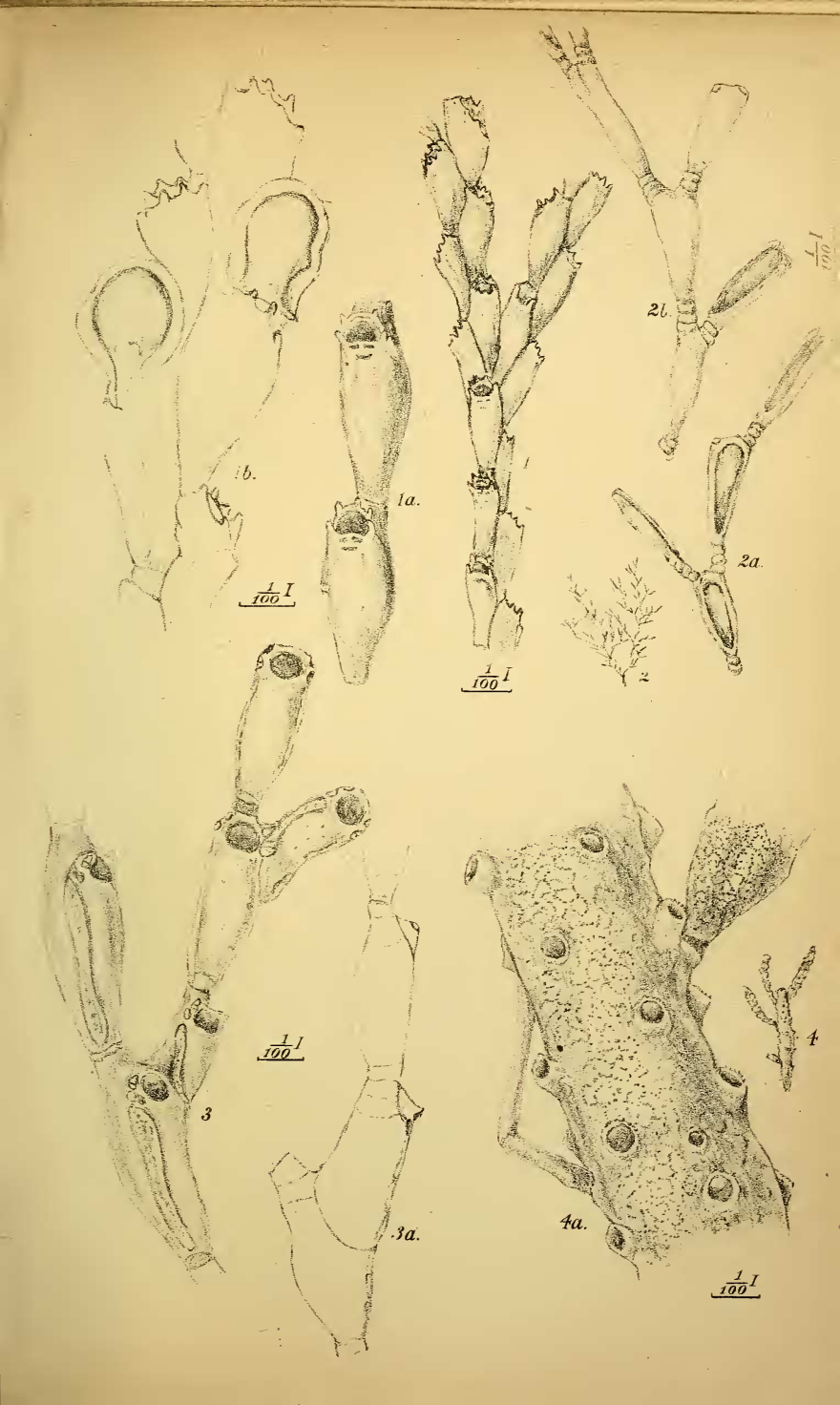
Fig. 1. *Urceolipora nana.* Fig. 1*a*. Two cells more highly magnified. Fig. 1*b*. Portion of branch showing two ovicells, from a specimen mounted in balsam, and seen by transmitted light.
Fig. 2. *Maplestonia simplex*, natural size. Figs. 2*a* and 2*b*. Front and back views of portion of the same.
Fig. 3. *Catenicella gracilenta.* Fig. 3*a*. Back view of the same.
Fig. 4. *Tubucellaria cereoides*, natural size. Fig. 4*a*. Portion of the same magnified.

Plate II.

Fig. 1. *Beania Wilsoni*, front view. Fig. 1*a*. Back view of single cell.
Fig. 2. *Membranipora bimamillata.*
Fig. 3. *Membranipora porcellana.* Fig. 3*a*. Portion of the same more highly magnified. The wrong scale has been accidentally given; the enlargement is about twice that of the other figures.
Fig. 4. *Schizoporella cryptostoma*, portion near the edge of the zoarium. Fig. 4*a*. Group of cells from the same specimen, showing ovicells and avicularia.
Fig. 5. *Cellepora munita*, natural size. Figs. 5*a* and 5*b*. Portions magnified. Fig. 5*c*. Operculum, more highly magnified.
Fig. 6. *Lekythopora hystrix*, to show the form of the primary mouth. Fig. 6*a*. Operculum.

Plate III.

Fig. 1. *Cellepora longirostris*, natural size. Fig. 1*a*. Portion magnified.
Fig. 2. *Cellepora platalea*, group from the growing edge. Fig. 2*a*. Group of old cells, showing the avicularium and ovicells. There is too marked a sinus in the lower lips of the cells, which should be nearly straight or slightly hollowed.
Fig. 3. *Cellepora Costazii.* Fig. 3*a*. Ovicells of same. Fig. 3*b*. Single cell, with small avicularium on high process.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